

L 4457-66

ACCESSION NR: AP5018718

the space group, and the unit-cell dimensions of representatives of these three groups are presented. The first group (LaGePr), consists of crystals belonging to the monoclinic syngony, space group  $C_{2h}^5$  --  $P2_1/c$  with four formula units per unit cell. The second group includes Pr, Nd, Sm, Eu, Gd, Tb, and Dy, with crystals of rhombic symmetry, and space group  $C_{2v}^9$  --  $Pna2_1$ , with four formula units per unit cell. The third group includes Ho, Er, Tm, Yb, Lu, and Y, forming crystals of triclinic syngony. The space group is  $Tl$  and the unit cell contains two formula units. The parameters of the unit cells and the infrared absorption spectra were obtained for some of these elements. In the case of the tetrahydrate of praseodymium perrhenate, it crystallizes from solutions in both monoclinic and rhombic syngony under the same conditions. 'The authors thank Ye. S. Makarov for interest in the work.' Orig. art. has: 3 figures and 2 tables.

Card 2/3

L 4457-66

ACCESSION NR: AP5018718

2

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Venadskogo AN SSSR (Institute of Geochemistry and Analytical Chemistry, AN SSSR ; Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 22Dec64 ENCL: 00 SUB CODE: OP, SS

NR REF SOV: 003 OTHER: 003

beh  
Card 3/3

KHARITONOV, Yu.Ya.; YURANOVA, L.I.; PLYUSHCHEV, V.Ye.; PERVYKH, V.G.

Infrared absorption spectra of zirconium (IV) and hafnium (IV)  
nitrate compounds. Zhur.neorg.khim. 10 no.4:741-744 Ap '65.  
(MIRA 18:6)

1. Institut obshchey i neorganicheskoy khimii AN SSSR imeni  
Kurnakova i Moskovskiy institut tonkoy khimicheskoy tekhnologii  
imeni Lomonosova.

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001341410002-5

SAMUSEVA, R.G., PIYUSHCHEV, V.Ye.

Systems CsF - KF and CsF - RbF. Zhur. neorg. khim. 10 no.5  
1270-1274. My '65. (MIRA 18:6)

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001341410002-5"

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001341410002-5

PLYUSHCHEV, V.Ye.; GRIZIK, A.A.

Potassium polynafnates. Zhur. neorg. khim. 10 no.3:636-642  
Mr '65. (MIRA 18:7)

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001341410002-5"

PLYUSHCHEV, V.Ye.; YURANOVA, L.I.; KOMISSAROVA, L.N.

Basic oxynitrates of zirconium and hafnium. Zhur. neorg. khim.  
10 no.3:643-646 Mr '65. (MIRA 18:7)

SHKLOVER, L.P.; PLYUSHCHEV, V.Ye.; KUZNETSOVA, G.I.; TRUSHINA, T.A.

Heavy lanthanide formates. Zhur. neorg. Khim. 10 no.5:1121-  
1125 My '65. (MIRA 18:6)

L 1556-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG

ACCESSION NR: AP5022268

UR/0363/65/001/007/1155/1161  
546.65'786

AUTHOR: Plyushchev, V. Ye.; Amosov, V. M.

TITLE: Synthesis and properties of neutral tungstates of lanthanum, cerium, praseodymium, and neodymium

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965,  
1155-1161

TOPIC TAGS: lanthanum compound, cerium compound, neodymium compound, praseodymium compound, tungstate

ABSTRACT: The conditions of formation of tungstates of La, Ce, Pr, and Nd were studied in the course of their high-temperature synthesis. The extent of reaction between powders of the oxide  $M_2O_3$  and  $WO_3$  (1:3) was followed by determining the amount of unreacted  $WO_3$  by quantitative chemical phase analysis. The reaction was also studied by differential thermal and x-ray phase analysis. A close investigation of the kinetics of formation of  $M_2O_3 \cdot 3WO_3$ , studied on the mixtures  $La_2O_3 + 3WO_3$  and  $Nd_2O_3 + 3WO_3$  in order to determine the optimum conditions for synthesizing these compounds, confirmed the results of the thermographic and x-ray phase analyses. The rate of the reaction between  $M_2O_3$  and  $WO_3$  is thought  
Cord 172

L 1556-66

ACCESSION NR: AP5022268

to be determined by the diffusion of the initial oxides through the layer of the reaction product; additional grinding of the sinter accelerates the reaction rate, and at 900C the reactions proceed practically to completion in a relatively short time (12 hr). The tungstates formed are anisotropic, nonhydroscopic, finely crystalline, and insoluble in water, alcohol, or acetone. They are attacked by acids and alkalis. All four tungstates are isostructural and have a monoclinic lattice; their lattice constants and densities are tabulated. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 23Feb65

ENCL: 00

SUB CODE: IC,SS

NO REF SOV: 006

OTHER: 026

Card 2/2

SHAKHNO, I.V.; FLYUSHCHEV, V.Ye.; AVZHUYEVA, Ye.M.

System  $\text{Na}_2\text{Cr}_2\text{O}_7$  -  $\text{Cs}_2\text{Cr}_2\text{O}_7$  -  $\text{H}_2\text{O}$  at 25° and 51°C.

Zhur. neorg. khim. 10 no.5:1237-1240 My '65. (MIRA 13:6)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova.

PLYUSHCHEV, V.Ye.; SHKLOVER, L.P.; SHKOL'NIKOVA, L.M.; KUZNETSOVA, G.P.;  
TRUSHINA, T.A.

Yttrium and erbium formates and their properties. Zhur. ob.  
khim. 35 no.10:1783-1790 O '65. (MIRA 18:10)

ZIMINA, G.V.; PLYUSHCHEV, V.Ye.; STEPINA, S.B.

Interaction of antimony (III) chlorides and bromides with alkaline elements with closely related properties in solutions of corresponding halogen acids. Dokl. AN SSSR 163 no.4:887-890 Ag '65.

(MIRA 18:8)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova. Submitted January 15, 1965.

LEPESHKOVA, L.I.; STEPINA, S.B.; PLYUS'CHEV, V.Ye.

Preparation of pure cesium salts using cesium diiodobromide.  
Izv.vys.ucheb.zav.; khim.i khim.tekh. 7 no.6:875-880 '64.  
(MIRA 18:5)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova, kafedra khimii i tekhnologii redkikh i rassnyannikh  
elementov.

PLYUSHCHEV, V.Ye.; SHKLOVER, L.P.; TRUSHINA, T.A.

Composition and thermal stability of lanthanum formate. Zhur.  
neorg. khim. 9 no.12:2710-2714 D '64.

(MIRA 18:2)

L-59238-65 EPA(s)-2/EWT(m)/EPF(n)-2/T/EWP(t)/EWP(b)/EWA(c) Pt-7/Pn-4 IJP(e)

JD/MM/JD

ACCESSION NR: AP5015014

UR/0078/65/010/005/1312/1319

546.834'35-31

33

B

AUTHOR: Grizik, A. A.; Piyushchev, V. Ye.; Kamenskaya, A. N.

TITLE: Rubidium dizirconate

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 6, 1965, 1312-1319

TOPIC TAGS: rubidium dizirconate, zirconium dioxide, x-ray phase analysis

ABSTRACT: A systematic search for individual compounds in the system Rb<sub>2</sub>O-ZrO<sub>2</sub> was undertaken in order to determine the interaction between the components and find out whether the separation of individual phases occurs. The reactions of ZrO<sub>2</sub> with RbNO<sub>3</sub> (at 700-1200°C) and Rb<sub>2</sub>CO<sub>3</sub> were carried out by sintering and fusion. In the case of Rb<sub>2</sub>CO<sub>3</sub>, the reaction was too weak to permit any conclusions regarding the compounds formed. X-ray phase analysis showed the formation of three different phases characterized by individual crystal lattices; one of them was identified as rubidium dizirconate Rb<sub>2</sub>O · 2ZrO<sub>2</sub>, and its composition was confirmed by chemical analysis. The effect of the reaction temperature, duration of sintering, initial molar ratio of the components, and additional sintering on the extent of the reaction between ZrO<sub>2</sub> and RbNO<sub>3</sub> and on the composition of the products formed was investigated. Data were obtained on the hydrolyza-

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ACCESSION NR: AP5015014

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bility, thermal stability, and the reactions of rubidium dizirconate with a series of reagents (methanol, methanol + water, other homologous alcohols). Methanol was found to be the best solvent for  $Rb_2Zr_2O_7$ . The physicochemical properties and structure of rubidium dizirconate were determined, and the corresponding x-ray data are tabulated. Orig. art. has: 6 figures and 4 tables.

ASSOCIATION: None

SUBMITTED: 04Jan64

ENCL: 00

SUB CODE: IC

NO REF SOV: 006

OTHER: 003

*dm*  
Card 2/2

PLYUSHCHEV, V.Ye.; KURTOVA, L.V.

System Lit, Na<sup>+</sup> || NO<sub>3</sub><sup>-</sup>, CO<sub>3</sub><sup>2-</sup> - H<sub>2</sub>O at 25 C. Zhur. neorg.  
khim. 10 no.6:1471-1476 Je '65. (MIRA 18:6)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova.

PLYUSHCHEV, V.Ye.; SHKLOVER, L.P., SHKOL'NIKOVA, L.M.; KUZNETSOVA, G.P.;  
NADEZHINA, G.V.

Properties of formiates of rare-earth elements in the lanthanum-  
holmium series. Dokl. AN SSSR 160 no.2:366-369 Ja '65.  
(MIRA 18:2)

1. Institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova.  
Submitted July 8, 1964.

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001341410002-5

KOMISSAROVA, L.N.; VARFOLOMEYEV, M.B.; IVANOV, V.I.; PLYUSHCHEV, V.Ye.

Production and certain properties of scandium perrhenates. Dokl.  
AN SSSR 160 no.3:608-611 Ja '65. (MIPA 18:3)

1. Moskovskiy gosudarstvennyy universitet. Submitted July 24,  
1964.

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001341410002-5"

POKROVSKAYA, L.I.; PLYUSHCHEV, V. Ye.; KUZNETSOVA, G.P.

Study of the system lithium sulfate-cesium sulfate -water. Izv.  
vys. ucheb. zav., khim. i khim. tekhn. 7 no.5:705-710 '61  
(MIRA 18:1)

1. Kafedra khimii i tekhnologii redkikh i rassseyannyykh ele-  
mentov Moskovskogo instituta tonkoy khimicheskoy tekhnologii  
imeni M.V. Lomonosova.

SAMUSEVA, R.G.; ZHARKOVA, R.M.; PLYUSHCHEV, V. Ye.

System  $\text{Na}_2\text{MoO}_4$  -  $\text{Cs}_2\text{MoO}_4$ . Zhur. neorg. khim. 9 no.11:2678-2679  
N 164. (MIRA 18:1)

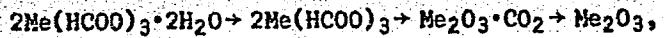
1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
M.V. Lomonosova.

L 52061-65	EWT(m)/EWP(t)/EWP(b)	IJP(c)	ID/JG
ACCESSION NR:	AP5012969	UR/0078/65/010/005/1121/1125	
AUTHOR:	Shklover, L. P.; Plyushchev, V. Ye.; Kuznetsova, G. P.; Trushina, T. A.		
TITLE:	Formates of heavy lanthanides		
SOURCE:	Zhurnal neorganicheskoy khimii, v. 10, no. 5, 1965, 1121-1125		
TOPIC TAGS:	27	27	17
thulium formate, ytterbium formate, lutetium formate, lanthanide formate, thermal analysis, gravimetric analysis			
27			
ABSTRACT: Thulium, ytterbium, and lutetium formates, having the formula Me(HCOO) <sub>3</sub> ·2H <sub>2</sub> O, where Me = Tu, Yb, or Lu, were formed by reacting HCOOH with the hy- droxides of these metals. Anhydrous ytterbium and lutetium formates were obtained by drying the dihydrates at 80-90°C. The data of the ultimate analysis were confirmed by the results of thermogravimetry and IR spectra. It was found by thermo- gravimetric analysis that Tu(HCOO) <sub>3</sub> ·2H <sub>2</sub> O may be dehydrated under similar conditions. The density of ytterbium and lutetium formates and their dihydrates was determined pycnometrically, their solubility in water at 25, 40, and 50°C was studied by the isothermal method. Isothermal drying and thermal and thermogravimetric analysis			
Card 1'2			

I 52061-65

ACCESSION NR: AP5012969

were used to investigate the thermal stability of the three formates, which was found to decrease in the order Tu - Tb - Lu. The decomposition of  $\text{Me}(\text{HCOO})_3$  takes place in several stages: following dehydration, thermally unstable intermediate products are formed having the formula  $\text{Me}_2\text{O}_3 \cdot \text{CO}_2$ . This stage of the decomposition is characterized by exothermic effects when a platinum crucible is used, and by endo- and exothermic effects in the case of a quartz crucible. The intermediate products dissociate into  $\text{Me}_2\text{O}_3$  even during formation. This last stage of the decomposition is not associated with any thermal effects. The following mechanism is proposed:



where Me = Tu, Tb, Lu. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 06Jul64

ENCL: 00

SUB CODE: IC, GC

NO REF SGV: 005

OTHER: 002

*me*  
Card 272

I-52065-55 EPA(b)-2/EWT(n)/EPF(c)/EPR/T/EWP(t)/EWP(b)/EWA(c) Pr-4/

Ps-4/Pt-7 IJP(c) JD/JW/JG

ACCESSION NR: AP5012976

UR/0078/65/010/005/1270/1272

40

B

AUTHOR: Samuseva, R. G.; Plyushchev, V. Ye.

TITLE: CsF - KF and CsF - RbF systems

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 5, 1965, 1270-1272

TOPIC TAGS: cesium fluoride, potassium fluoride, rubidium fluoride, binary phase diagram, alkali halide

ABSTRACT: The study is an integral part of the authors' investigation of diagrams of the condensed state of binary systems formed by cesium halides with halides of other alkali elements. The CsF - KF and CsF - RbF systems were studied by thermal analysis. A Kurnakov pyrometer and a differential thermocouple were used to record the heating curves. The preparation of the samples (mixing of components, preparation of alloys) and heating during pyrometry were carried out in platinum crucibles covered with special lids with apertures. The CsF - KF system (see fig. 1 of the Enclosure) is characterized by the formation of one-sided CsF-base solid solutions (containing up to 15 mol % KF). The eutectic point corresponds to 57 mol % CsF and

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I 52065-65

ACCESSION NR: AP5012976

6259C. The fusibility diagram of the CsF-RbF system (see fig. 2 of the Enclosure) shows unlimited mutual solubility between RbF and CsF (formation of a continuous series of solid solutions); this is in complete agreement with the known isomorphous relationships of the overwhelming majority of simple rubidium and cesium salts.  
Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 04Jul64

ENCL: 01

SUB CODE: IC

NO REF Sov: 003

OTHER: 000

C-1 2/3

L-52065-65  
ACCESSION NR: AP5012976

ENCLOSURE: 01

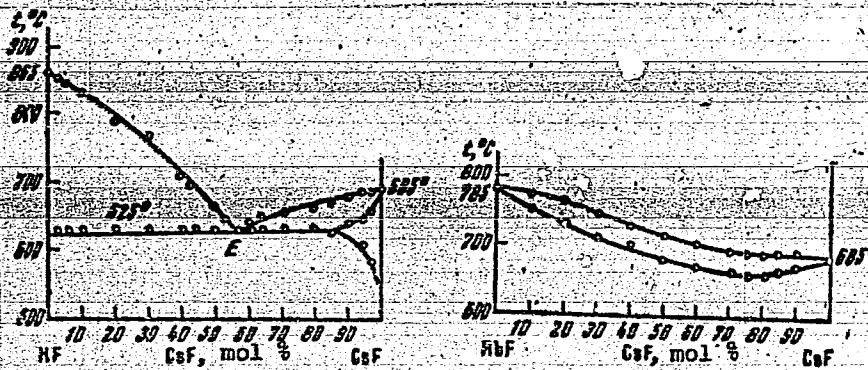


Fig. 1. Fusibility diagram of the system CsF - KF

Fig. 2. Fusibility diagram of the system CsF - RbF

ML  
Card 3/3

PLYUSHCHEV, V. Ye.; SHKLOVER, L.P.; SHKOL'NIKOVA, L.M.

Composition and structural data of the formates of elements  
in the lanthanum-holmium series. Zhur. strukt. khim. 5 no.5:  
794-796 S-0 '64 (MIRA 18:1)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
M.V. Lomonosova i Institut khimicheskikh reaktivov i osobo  
chistykh veshchestv.

KUZNETSOVA, G.P.; PLYUSHCHEV, V.Ye.; OBOZHENKO, Yu.V.

Study of solubility and of solid phases in the system  
 $\text{Li}_2\text{SO}_4 - \text{Rb}_2\text{SO}_4 - \text{H}_2\text{O}$ . Izv. vys. ucheb. zav.; khim. i  
khim. tekhn. 7 no.3:357-359 '64.

(MIRA 17:10)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii  
imeni Lomonosova, kafedra khimii i tekhnologii redkikh i  
i rasseyannykh elementov.

SAMUSEVA, R.G.; PLYUSHCHEV, V.Ye.

Systems KI - RbI, KI - CsI, and RbI - CsI. Zhur. neorg. khim. 9  
no.10:2433-2435 O '64.

Systems NaBr - RbBr and NaI - RbI. Ibid.:2436-2437  
(MIRA 17:12)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.  
Lomonosova.

KURTOVA, L.V.; PLYUSHCHEV, V.Ye.; GORSHKOVA, G.K.

System  $\text{Li}^+$ ,  $\text{Na}^+$  ||  $\text{Cl}^-$ ,  $\text{CO}_3^{2-}$ -  $\text{H}_2\text{O}$  at  $25^\circ$ . Zhur. neorg. khim. 9  
no.10:2458-2462 D '64. (MIRA 17:12)

1. Moskovskiy institut khimicheskoy tekhnologii im. M.V. Lomonossova.

PLYUSHCHEV, V.Ye.; VARFOLOMEYEV, M.B.

Tetrahydrates of rare-earth and yttrium perrhenates. Dokl. AN SSSR 158  
no.3:664-667 S '64. (MIRA 17:10)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. Lomonosova.  
Predstavлено akademikom I.V.Tananayevym.

1 39302-65 EVT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(b) IJP(c) JD/JG  
S/0020/65/160/002/0365/0369

ACCESSION NR: AP5004597

AUTHOR: Plyushchev, V. Ye.; Shklover, L. P.; Shkol'nikova, L. M.; Kuznetsova,  
G. P.; Nadezhina, S. V.

TITLE: Properties of rare earth formates from lanthanum to holmium

SOURCE: AN SSSR. Doklady, v. 160, no. 2, 1965, 366-369

TOPIC TAGS: rare earth compound, polymorphism, isomorphism, differential thermal analysis, thermal stability

ABSTRACT: It is stated that the properties of rare earth formates are insufficiently known. Formates of Y, La and all lanthanides of the Pr-Ho series (except Pm) were synthesized by the reaction of freshly precipitated hydroxides with HCOOH. Ce(III) formate was synthesized by the dissolution of cerium carbonate in HCOOH. X-ray studies of polycrystalline samples indicate polymorphism of Ce, Pr, Nd, Sm and Gd formates and isomorphism of formates of all elements in the La-Ho series. In the investigated series of rare earth formates, there is a systematic decrease in the parameter  $a$  of the rhombohedral lattice which is apparently associated with lanthanide contraction. The authors determined the density of the above formates by the pycnometric method at  $20 \pm 0.1^\circ C$ . The solubility of these compounds was

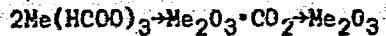
Card 1/3

L 39302-65

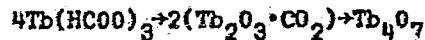
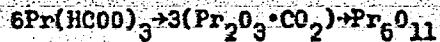
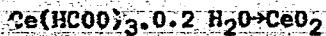
ACCESSION NR: AP5004597

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determined by the isothermal method at 25, 40 and 50° C. Special attention was devoted to the thermal stability of rare earth formates. Formates were investigated simultaneously by means of thermogravimetric (TGA) and differential thermal analysis (DTA). On the basis of analysis of TGA curves the following dissociation schemes were proposed:



where Me = La, Nd, Sm, Eu, Gd, Dy, Ho.



Orig. art. has: 1 table, 2 figures.

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1 39302-65

ACCESSION NR: AP5004597

ASSOCIATION: Institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova  
(Institute of Fine Chemical Technology)

SUBMITTED: 20Jun64.

ENCL: 00

SUB CODE: IC

NO REF SOV: 011

OTHER: 015

Card 3/3 JU

L 23037-65

ACCESSION NR: AP5001751

S/0153/64/007/005/0705/0710

AUTHOR: Pokrovskaya, L. I.; Plyushchev, V. Ye.; Kuznetsova, G. P.

B

TITLE: Investigation of the lithium sulfate-cesium sulfate-water system

SOURCE: IVUZ, Khimiya i khimicheskaya tekhnologiya, v. 7, no. 5, 1964,  
705-710

TOPIC TAGS:  $\text{Li}_2\text{SO}_4$ ,  $\text{Cs}_2\text{SO}_4$ ,  $\text{H}_2\text{O}$  system, lithium sulfate double salt, cesium sulfate double salt, solubility

ABSTRACT: Solubilities in the  $\text{Li}_2\text{SO}_4$ - $\text{Cs}_2\text{SO}_4$ - $\text{H}_2\text{O}$  system were studied by the isothermal method at 25 and 50 C. These isotherms of the ternary system were identical and consisted of 4 areas of crystallization corresponding to the separation of  $\text{Li}_2\text{SO}_4 \cdot \text{H}_2\text{O}$ , the double salts  $3\text{Li}_2\text{SO}_4 \cdot \text{Cs}_2\text{SO}_4 \cdot 3\text{H}_2\text{O}$  and  $\text{Li}_2\text{SO}_4 \cdot \text{Cs}_2\text{SO}_4$ , and  $\text{Cs}_2\text{SO}_4$ . These were confirmed by optical and x-ray analysis. Thermographic and thermogravimetric studies established that the compound  $3\text{Li}_2\text{SO}_4 \cdot \text{Cs}_2\text{SO}_4 \cdot 3\text{H}_2\text{O}$  dehydrated in the 180-300 C temperature interval, decom-

Cord 1/2

L 23037-65

ACCESSION NR: AP5001751

posing simultaneously to  $5\text{Li}_2\text{SO}_4 \cdot \text{Cs}_2\text{SO}_4$  and  $\text{Li}_2\text{SO}_4 \cdot \text{Cs}_2\text{SO}_4$ . Orig. art. has:  
3 tables and 4 figures

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im.  
M. V. Lomonosova, Kafedra khimii i tekhnologii redkikh i rasseyannykh elementov (Moscow Institute of Fine Chemical Technology, Department of Chemistry and Technology of Rare and Trace Elements)

SUBMITTED: 30Dec63

ENCL: 00

SUB CODE: Gc,IC

NR REF SOV: 004

OTHER: 007

Card 2/2

VIASOVA, I.V.; ZIMINA, G.V.; STEPINA, S.B.; MOLOTOVA, O.I.; PIYUSHCHEV, V.Ye.

Solubility of potassium, rubidium, and cesium bromides in  
hydrobromic acid. Zhur. neorg. khim. 9 no.8:2040-2041 Ag '64.  
(MIRA 17:11)

PLYUSHCHEV, V.Ye.; SAMUSEVA, R.G.

Binary systems of cesium bromide with lithium, potassium and  
rubidium bromides. Zhur. neorg. khim. 9 no.9:2179-2181 S '64.  
(MIRA 17:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova.

PLYUSHCHEV, V. Ye.; AMOSOV, V.M.

High temperature synthesis and some properties of neutral  
tungstates of yttrium, lanthanum, and lanthanides. Dokl.  
AN SSSR 157 no.1:131-134 J1 '64 (MIRA 17:8)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im.  
M.V. Lomonosova. Predstavлено akademikom I.V. Tananayevym.

L 8866-65 EWP(m)/EWP(c)/EWP(j)/EWP(q)/EWP(b); Po-h/PR-1; RPL JD/JG/RM  
ACCESSION NR: AP4043573 5/0078/64/009/008/1830/1832

AUTHOR: Shklover, L. P.; Plyushchev, V. Ye.

TITLE: Reaction between ortho-cyanobenzamide and rare-earth-metal salts

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 8, 1964, 1830-1832

TOPIC TAGS: rare earth metal phthalocyanine, lanthanide phthalocyanine, neodymium phthalocyanine, erbium phthalocyanine, phthalocyanine, ortho cyanobenzamide, ortho phthalonitrile, metal phthalocyanine synthesis

ABSTRACT: Synthesis of neodymium or erbium phthalocyanines was attempted by reacting neocyclonitrile of erbium chloride with ortho-cyanobenzamide (CBA) instead of the ortho-phthalonitrile previously used for synthesis of erbium and neodymium phthalocyanines. CBA is an inexpensive product in the preparation of O-phthalonitrile from phthalic anhydride and has such high yields and some advantage over O-phthalonitrile. Neodymium gave more products than certain other rare-earth elements, namely, erbium, Y, La, Ce, Pr, and Sm phthalocyanines. The procedure is simple and reproducible. Most of the reaction products

Cord P/2

L 8866-65  
ACCESSION NR.: AF4043570

O

at various temperatures are described. The absorption peaks of the solutions of reacting mixtures in  $\alpha$ -bromonaphthalene indicated the presence of free phthalocyanine in the reaction product obtained at 240-250°C. The free phthalocyanine was not detected in the products of the reaction with  $\alpha$ -phthalonitrile. It is concluded that the CBA method is less suitable than the  $\alpha$ -phthalonitrile method for preparing lanthanide phthalocyanines, since an additional separation of the free phthalocyanine is necessary in the former. Cris. art. has: 4 figures.

ASSOCIATION: None

SUBMITTED: 05Jun63

ATT PRCSSR: 3099

ENCL: 00

SUB CODE: GC

NO HEP ECR: 006

OTHER: 007

Card 2/2

L 8864-55 EWT(m)/SPT(c)/EWP(j)/EWP(q)/EWP(b) Po-4/Pr-4 RPL/ESD(t)/  
ASD(a)-5/ESD(dp)/AFWL/RAEM(t) JD/RM  
ACCESSION NR: AP4043582 S/0078/64/009/008/2015/2016

AUTHOR: Plyushchev, V. Ye.; Shklover, L. P.

TITLE: Yttrium derivatives of phthalocyanine

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 8, 1964, 2015-2016

TOPIC TAGS: phthalocyanine, yttrium phthalocyanine, yttrium chloride, o-phthalonitrile, organic semiconductor

ABSTRACT: Yttrium phthalocyanine has been synthesized for the first time by the reaction of yttrium chloride with o-phthalonitrile. This work was done in view of the potential use of metal derivatives of phthalocyanine as pigments, dyes, catalysts, semiconductors, etc. Preparative conditions were essentially the same as for erbium phthalocyanine (V. Ye. Plyushchev, L. P. Shklover, Zh. neorgan. khimii, 9, 335 (1964)). A purification procedure was developed which makes it possible to isolate yttrium phthalocyanine as  $[C_{34}H_{16}N_8]Y(OH)_6$ . Absorption bands in the visible region for solutions of yttrium

Card 1/2

L 8864-65  
ACCESSION NR: AP4043582

phthalocyanine in  $\alpha$ -bromonaphthalene are independent of the anion combined with yttrium. Orig. art. has: 2 tables.

ASSOCIATION: None

SUBMITTED: Z1Jun63

ATD PRESS: 3099

ENCL: 00

SUB CODE: GC

NO REF Sov: 003

OTHER: 000

Card 2/2

ACCESSION NR: AP4042022

S/0020/64/157/001/0131/0134

AUTHORS: Plyushchev, V. Ye.; Amosov, V. M.

TITLE: High temperature synthesis and some properties of neutral tungstates of yttrium, lanthanum, and lanthanoids

SOURCE: AN SSSR. Doklady\*, v. 157, no. 1, 1964, 131-134

TOPIC TAGS: yttrium, lanthanum, lanthanum compound, tungstate, synthesis property

ABSTRACT: The kinetics and condition for formation of neutral tungstates of some rare earth elements synthesized at high temperatures, for which neither the high-temperature synthesis nor the properties have been hitherto described in the literature. The initial composition and the procedure are briefly described. Most of the investigations were aimed at establishing the optimum conditions for the synthesis of these compounds. The properties of the result-

Card 1/5

ACCESSION NR: AP4042022

ant substances are tabulated. Two types of structures, with different x-ray patterns, have been found, with transition from one structure to the other being characterized by a change in some properties of these compounds. A chemical phase analysis has shown that the neutral tungstate of rare earth elements do not decompose up to the melting point. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 17Feb64

ENCL: 03

SUB CODE: GC

NR REF SOV: 001

OTHER: 014

Card 2/5

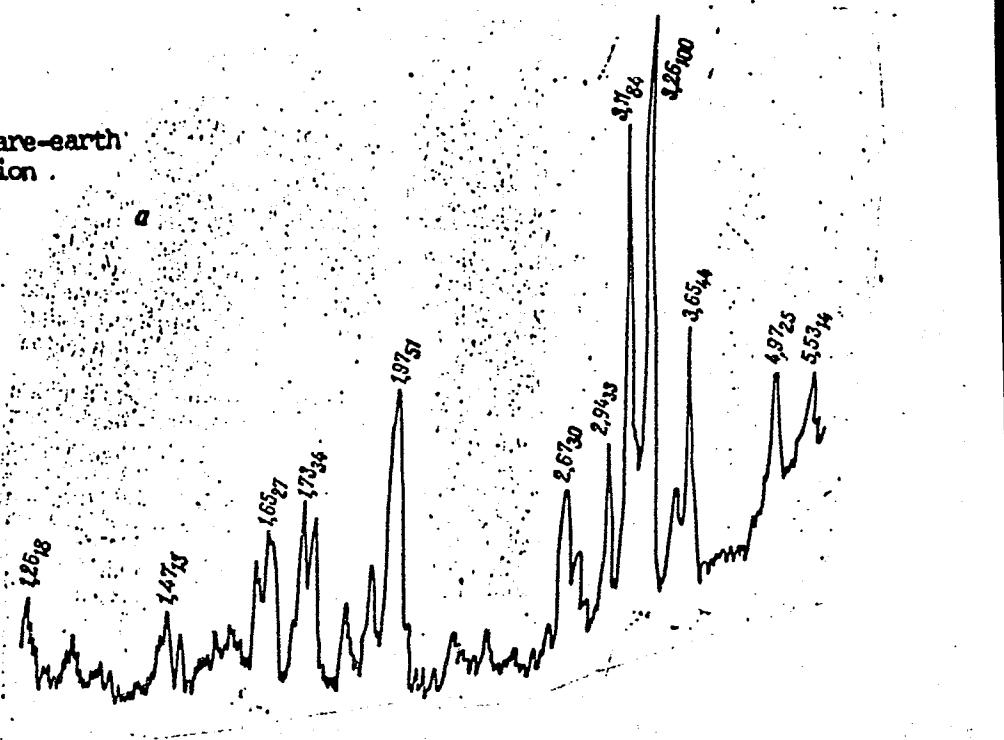
ACCESSION NR: AP4042022

ENCLOSURE: 01

X-ray patterns of rare-earth  
tungstates (ionization  
method)

a - from La to Ho

Card 3/5



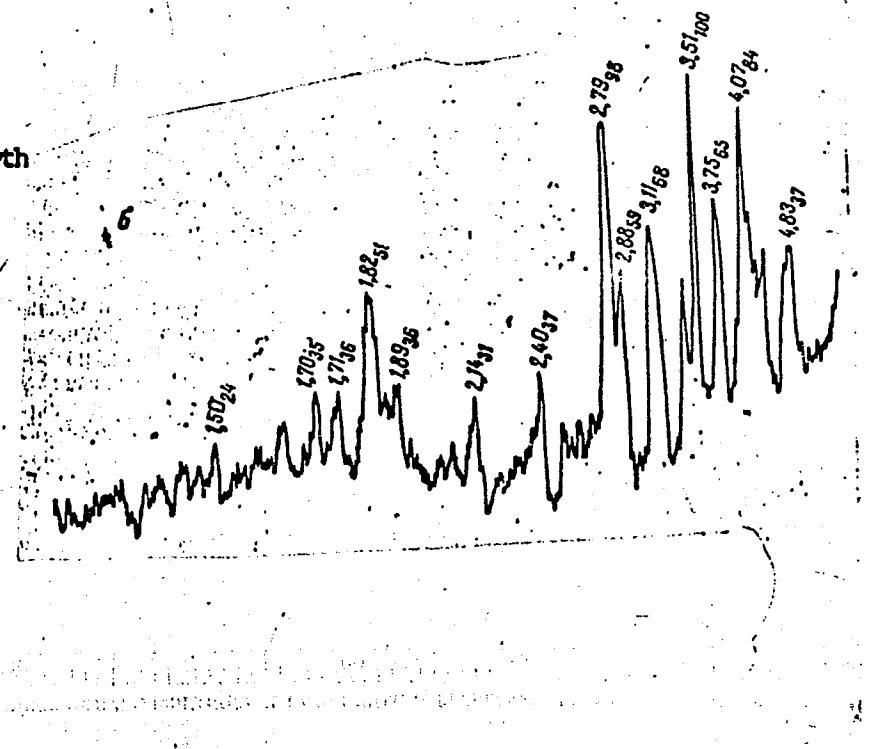
ACCESSION NR: AP4042022

ENCLOSURE: U2

X-ray patterns of rare earth  
tungstates

b - from Er to Lu and Y

Card 4/5



• ACCESSION NR: AP4042022

ENCLOSURE: 03

Composition and some properties of neutral tungstates of yttrium,  
lanthanum, and the lanthanoids

- 1 - compound
- 2 - molar ratio
- 3 - main subst., % content
- 4 - density g/cm<sup>3</sup>
- 5 - melt. temp.
- 6 - color
- 7 - white
- 8 - greenish-yellow
- 9 - lettuce color
- 10 - pale lilac
- 11 - pale yellow
- 12 - pale pink,  
almost colorless
- 13 - pale green,  
almost colorless
- 14 - pink

1 Соединение	2 Найденное молярное отношение $M_2O_3 : WO_3$	3 Содержание основного вещества, % (фазовый химический анализ)	4 Плотность, г/см <sup>3</sup>	5 Темпер. плавления, ° С	6 Цвет
$La_2O_3 \cdot 3WO_3$	1:3,09	99,43—99,47	6,508	1140	Белый <sup>7</sup>
$Ce_2O_3 \cdot 3WO_3$	1:3,02	99,76—99,84	6,773	1100	Зеленовато-желтый <sup>8</sup>
$Pr_2O_3 \cdot 3WO_3$	1:2,95	99,85—99,87	6,983	1140	Салатный
$Nd_2O_3 \cdot 3WO_3$	1:3,01	99,65—99,72	7,065	1250	Бледно-сиреневый <sup>10</sup>
$Sm_2O_3 \cdot 3WO_3$	1:2,97	99,40—99,04	7,229	1220	Бледно-желтый <sup>11</sup>
$Eu_2O_3 \cdot 3WO_3$	1:3,03	99,70—99,70	7,357	1260	Бледно-розовый <sup>12</sup> , почти бесцветный
$Gd_2O_3 \cdot 3WO_3$	1,2,99	99,13—99,28	7,475	1290	Белый
$Tb_2O_3 \cdot 3WO_3$	1:2,07	99,55—99,63	7,624	1360	Белый
$Dy_2O_3 \cdot 3WO_3$	1:2,93	98,00—98,50	7,680	1410	Бледно-зелёный, <sup>13</sup> почти бесцветный
$Ho_2O_3 \cdot 3WO_3$	1:3,08	90,00—99,20	7,948	1460	Бледно-желтый
$Er_2O_3 \cdot 3WO_3$	1:3,02	99,22—99,30	5,478	1500	Розовый <sup>14</sup>
$Tu_2O_3 \cdot 3WO_3$	1:3,08	99,02—99,10	5,225	1520	Бледно-зелёный, <sup>15</sup> почти бесцветный
$Yb_2O_3 \cdot 3WO_3$	1:2,98	99,80—99,90	5,323	1540	Белый
$Lu_2O_3 \cdot 3WO_3$	1:3,03	99,10—99,30	5,340	1580	Белый
$Y_2O_3 \cdot 3WO_3$	1:2,97	99,73—99,81	4,407	1470	Белый

Card 5/5

ACCESSION NR: AP4012440

S/0078/64/009/002/0340/0346

AUTHORS: Shklover, L. P.; Plyushchev, V. Ye.

TITLE: Synthesis and purification of samarium and erbium phthalocyanins.

SOURCE: Zhurnal neorg. khim., v. 9, no. 2, 1964, 340-346

TOPIC TAGS: samarium phthalocyanin, erbium phthalocyanin, synthesis, purification, stability, absorption spectrum, labile compound

ABSTRACT: Samarium and erbium phthalocyanin were prepared by reacting samarium and erbium formate with o-phthalonitrile. The synthesis and purification of samarium phthalocyanin were studied by thermal, x-ray and spectrophotometric analyses. These compounds, purified with solvents, show an anomalous metal content. The nature of the anion at the central rare earth element has little effect on its phthalocyanin absorption in alpha-bromonaphthalene in the visible spectrum. It was shown that differential heating curves may be used to qualitatively characterize the degree of purification of the metal phthalocyanins from the starting materials, and absorption curves (in the visible

Card 1/2

ACCESSION NR: AP4012440

spectral range) of phthalocyanin solutions in alpha-bromo- or chloro-naphthalene may be used to detect disintegration of the metal phthalocyanin or contamination H<sub>2</sub>·phthalocyanin. The latter, C<sub>32</sub>H<sub>16</sub>N<sub>8</sub>.H<sub>2</sub> was shown spectrophotometrically to be formed by heating samarium phthalocyanin solutions in alpha-bromo-naphthalene or by reprecipitating erbium phthalocyanin from concentrated H<sub>2</sub>SO<sub>4</sub>. The samarium and erbium phthalocyanins have both labile and salt forming properties. "V. N. Davy\*dova, N. A. Dvornikova and T. A. Trushina participated in the experimental work." "The authors thank Ye. A. Shugam and Yu. V. Oboznenko for conducting the x-ray analysis." Orig. art. has: 3 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 21Jan63

DATE ACQ: 26Feb64

ENCL: 00

SUB CODE: CH

NR REF Sov: 010

OTHER: 006

Card 2/2

ACCESSION NR: AP4012439

S/0078/64/009/002/0335/0338

AUTHOR: Plyushchev V. Ye.; Shklover, L. P.

TITLE: Synthesis of erbium phthalocyanin

SOURCE: Zhurnal neorg. khim., v. 9, no. 2, 1964, 335-339

TOPIC TAGS: erbium phthalocyanin, synthesis, yttrium subgroup phthalocyanins, absorption spectrum, pigment, rare earth phthalocyanin

ABSTRACT: Erbium phthalocyanin is obtained by heating  $\text{ErCl}_3 \cdot 5\text{H}_2\text{O}$  with o-phthalonitrile (1:4 molar ratio) to 270-280°C. This synthesis is typical for the synthesis of phthalocyanins of the yttrium subgroup.  $\text{C}_{32}\text{H}_{16}\text{N}_8 \cdot \text{ErCl} \cdot 2\text{H}_2\text{O}$  is the formula proposed for erbium phthalocyanin, based on elemental chemical analysis of the pigment purified with solvents. The absorption spectrum of erbium phthalocyanin in alpha-bromonaphthalene in the 400-700 millimicron range shows an intense maximum at 667, and a second weaker absorption at 602 millimicrons. "I. F. Zakharchenko, N. A. Dvornikova and T. A. Trushina

Card 1/2

ACCESSION NR: AP4012439

participated in the experimental work." Orig. art. has: 2 figures, 1 table and 1 equation.

ASSOCIATION: None

SUBMITTED: 10Dec62      DATE ACQ: 26Feb64      ENCL: 00

SUB CODE: CH      NO REF SOV: 020      OTHER: 008

Card 2/2

ACCESSION NR: AP4012451

S/0078/64/005/002/0478/0479

AUTHORS: Shklover, L. P.; Plyushchev, V. Ye.; Rozdin, I. A.; Novikova, N. A.

TITLE: Synthesis of titanium phthalocyanine

SOURCE: Zhurnal neorg. khim., v. 9, no. 2, 1964, 478-479

TOPIC TAGS: titanium phthalocyanine, metal phthalocyanine, hydroxy form metal phthalocyanine, titanium phthalocyanide, titanium phthalocyanine preparation

ABSTRACT: Titanium phthalocyanine is unknown although zirconium and hafnium phthalocyanines have been prepared earlier by the authors (same journ. 9, 125 (1964)). It was found that  $TiCl_4$  readily reacts with o-phthalonitrile ( $O PhN$ ) (proportion 1:4; at 180-190°C; 1 hour) to produce a stable titanium phthalocyanide. Analysis showed the compound contains 7.57-7.47% Ti, 61.50-61.09% C, 2.62-2.52% H, 18.22-17.39% Ni and 4.50-4.45% Cl. This composition slightly differs from the formula  $C_{32}H_{14}N_8Cl \cdot Ti(OH)_x$ , in the calculated Cl content (5.64%) which is probably due to the volatility of  $TiCl_4$  causing deficient

Card 1/2

ACCESSION NR: AP4012451

chlorination of some phthalocyanine molecules. The yield of purified titanium phthalocyanine is 35% of the crude final product of reaction. Analogous chlorine-substituted O-PhN compounds with Cu, Al and Sb were described by Lindsted et al. (Ber. Deutseh. Chem. Ges., 72A, 93(1939)) Compounds with Zr and Hf have been prepared by the authors. Metal phthalocyanines in hydroxy form have been prepared by alkali solution treatment of pigments reprecipitated from concentrated  $H_2SO_4$ . Absorption peaks of titanium phthalocyanine solutions in  $\alpha$ -bromofluorophthaline appear at 701, 631 and 387  $\mu\mu$ . They do not shift after reprecipitation from  $H_2SO_4$ .

"I. F. Zakharchenko participated in the experimental part."

ASSOCIATION: None

SUBMITTED: 0 Jun 63

DATE ACQ: 26 Feb 64

ENCL: 00

SUB CODE: CH

NR REF SOV: 003

OTHER: 010

Card 2/2

PLYUSHCHEV, V.Ye.; KURTOVA, L.V.

Solubility of lithium carbonate in solutions of lithium chloride  
and nitrate at 25°. Zhur. neorg. khim. 8 no.10:2381-2383 ) '63.  
(MIRA 16:10)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im.  
Lomonosova.

(Lithium carbonates) (Solubility)

PLYUSHCHEV, V.Ye.

Binary systems  $Mg_2SO_4$  -  $CaSO_4$ . Zhur.neorg.khim. 7 no.6:1377-  
1381 Je '62. (MIRA 15:6)  
(Alkali metal sulfates) (Calcium sulfate)

SAMUSEVA, R.G.; PLYUSHCHEV, V.Ye.; YEGOROVA, R.S.

Mutual solubility of cesium and sodium iodides. Zhur.neorg.khim.  
7 no.6:1415-1417 Je '62. (MIRA 15:6)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova.  
(Cesium iodide) (Sodium iodide) (Solubility)

S/078/63/008/001/017/026  
B189/B101

AUTHORS: Samuseva, R. G., Plyushchev, V. Ye., Poletayev, I. F.

TITLE: Phase diagrams of the systems  $\text{Na}_2\text{CrO}_4\text{-Rb}_2\text{CrO}_4$  and  
 $\text{Na}_2\text{CrO}_4\text{-Cs}_2\text{CrO}_4$

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 1, 1963, 167-171

TEXT: 31  $\text{Na}_2\text{CrO}_4\text{-Rb}_2\text{CrO}_4$  and 26  $\text{Na}_2\text{CrO}_4\text{-Cs}_2\text{CrO}_4$  mixtures of differing composition were subjected to thermal analysis. The homogenization of the melts was performed by cooling down the mixtures very slowly to room temperature in the furnace (14 - 16 hours). The phase diagrams for  $\text{Na}_2\text{CrO}_4\text{-Rb}_2\text{CrO}_4$  (Fig. 1), and for  $\text{Na}_2\text{CrO}_4\text{-Cs}_2\text{CrO}_4$  (Fig. 2) were plotted from the analytical data. The assumed existence of analogies between the binary systems of chromates and of sulfates, due to the nearly equal ionic radii of  $\text{CrO}_4^{2-}$  (3.00 Å) and  $\text{SO}_4^{2-}$  (2.95 Å), was confirmed. There are 2 figures and 3 tables.

Card 1/4

Phase diagrams of the...

S/078/63/008/001/017/026  
B189/B101

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im.  
M. V. Lomonosova (Moscow Institute of Fine Chemical Technology  
imeni M. V. Lomonosov)

SUBMITTED: April 16, 1962

Fig. 1. Phase diagram of the system  $\text{Na}_2\text{CrO}_4$ - $\text{Rb}_2\text{CrO}_4$ .  
Legend: (1) mole%.

Fig. 2. Phase diagram of the system  $\text{Na}_2\text{CrO}_4$ - $\text{Cs}_2\text{CrO}_4$ .  
Legend: (1) mole%.

Card 2/2 Z

8/078/62/007/012/006/022  
B144/B180

AUTHORS: Grizik, A. A., Plyushchev, V. Ye., Pleskova, I. A.

TITLE: Synthesis and some properties of potassium dizirconate

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 12, 1962, 2702-2708

TEXT: The formation and properties of  $K_2O \cdot ZrO_2$  (I) were studied using the starting materials and procedure described in previous papers (Zh. neorgan. khimii, 7, 1962, 2095, 2086 and 1054). Separation of I from the trizirconate which forms equally in the  $K_2O \cdot ZrO_2$  system was achieved by exploiting their different behaviour in hydrolysis. At room temperature I is hardly hydrolyzed at all, being almost completely so at  $100^\circ C$ . Pure I was obtained for the first time from compounds with a molecular  $K_2O:ZrO_2$  ratio of 1.5 : 1 and a large excess of free  $K_2O$  at  $1000 - 1100^\circ C$  by sintering them for 1 hr at  $1000^\circ C$ , removing the free  $K_2O$  with methanol and acetone, and drying in air at  $50 - 70^\circ C$ .  $K_2O \cdot ZrO_2$  forms white oblong

Card 1/2

KOMISSAROVA, L.N., kand. khim. nauk, red.; PLYUSHCHEV, V.Ye.,  
doktor khim. nauk, red.; ALEKSEYEV, V.A., red.; KARPOV,  
I.I., tekhn. red.

[Metallurgy of rare earth metals] Metallurgija redkozemel'nykh metallov; sbornik statei. Moskva, Izd-vo inostr. lit-ry, 1962. 199 p.  
(Rare earth metals—Metallurgy)

SAMUSEVA, R.G.; POLETAYEV, I.F.; PLYUSHCHEV, V.Ye.

Melting diagrams of the systems  $\text{Na}_2\text{Cr}_2\text{O}_7 - \text{Rb}_2\text{Cr}_2\text{O}_7$  and  $\text{Na}_2\text{Cr}_2\text{O}_7 - \text{Cs}_2\text{Cr}_2\text{O}_7$ . Zhur.neorg.khim. 7 no.5:1146-1149 My '62.  
(MIRA 15:7)

(Systems (Chemistry)) (Thermal analysis)

GRIZIK, A.A.; PIYUSHCHEV, V.Ye.

Synthesis and some properties of sodium zirconate and hafnate.  
Zhur.morg.khim. 7 no.5:1054-1061 My '62. (MIRA 1517)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova. (Sodium zirconate) (Sodium hafnate)

YURANOVA, L.I.; KOMISSAROVA, L.N.; PLYUSHCHEV, V.Ye.

Solubility and thermal stability of zirconium and hafnium  
oxynitrates hexahydrates. Zhur.neorg.khim. 7 no.5:1062-1067  
My '62. (MIRA 15:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova. (Zirconium nitrate) (Hafnium nitrate)

S/828/62/000/000/017/017  
E071/E135

AUTHORS: Stepin, B.D., and Plyushchев, V.Ye.

TITLE: A polyhalide method of production of rubidium salts with a reduced content of potassium

SOURCE: Razdeleniye blizkikh po svoystvam redkikh metallov. Mezhvuz. konfer. po metodam razdel. blizkikh po svoystv. red. metallov. Moscow, Metallurgizdat, 1962, 206-213.

TEXT: Since there is no simple industrial method of producing rubidium salts free from admixtures of potassium, the authors investigated the possibility of this separation (in the case of a large excess of rubidium) using polyhalogenides and in particular rubidium chlorobromoiodate ( $Rb[I(ClBr)] \cdot H_2O$ ). They developed an easy method of producing this salt: whilst stirring continuously, bromine is added in small portions (in a total quantity of 5% in excess of the stoichiometric amount) to carefully ground iodine; to the iodine bromide so obtained, a hot (70-80 °C) concentrated solution of rubidium chloride is added. On cooling to about 0 °C, small orange crystals of the salt are precipitated. Some properties

Card 1/3

A polyhalide method of production ...

S/828/62/000/000/017/017  
E071/E135

of this salt were determined. It was found that even highly concentrated solutions will not yield a similar potassium salt precipitate. Coprecipitation of potassium with rubidium chlorobromiodate, tested under various conditions, was found to take place only to a very small extent. In tests with aqueous saturated solutions, lithium and sodium were found to behave similarly to potassium but, due to a lower solubility and a higher stability of Cs [I(ClBr)] in comparison with rubidium salt, some enrichment of the precipitate in caesium takes place. If the starting commercial rubidium chloride contains 2-5% potassium chloride, then, to remove the latter, it is necessary to carry out a single precipitation of Rb [I(ClBr)] · H<sub>2</sub>O from an aqueous solution and this should be followed by a single precipitation from an acetic acid solution (0.2-1.0 N CH<sub>3</sub>COOH). The final product will contain less than 0.0002% potassium, sodium, lithium and traces of calcium. On decomposing the rubidium salt by heating to 300-350 °C, some bromine is retained in the rubidium chloride formed. This is removed by passing chlorine or chlorine - air mixture through the aqueous solution of rubidium chloride.

Card 2/3

PLYUSHCHEV, V.Ye.; SAMUSEVA, R.G.; POLETAYEV, I.F.

Thermal analysis of the systems  $\text{Na}_2\text{SO}_4 - \text{Rb}_2\text{SO}_4$  and  $\text{Na}_2\text{SO}_4 - \text{Cs}_2\text{SO}_4$ . Zhur.neorg.khim. 7 no.4:860-865 Ap '62. (MIRA 15:4)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.  
Lomonosova.  
(All-Union metal sulfates) (Thermal analysis)

PLYUSHCHEV, V.Ye.; STEPINA, S.B.; STEPIN, B.D.; LEPESHKOVA, L.I.

Heterotripolyhalides of alkaline elements with closely related properties and their role in the production of pure rubidium and cesium compounds. Dokl. AN SSSR 143 no.6:1364-1367 Ap '62. (MIRA 15:4)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V.Lomonosova. Predstavлено академиком I.V.Tananayevym.  
(Rubidium compounds) (Cesium compounds)

PLYUSHCHEV, V.Ye.

Interaction of minerals containing rare alkali elements, with salts and oxides during sintering and melting. Part 7: Decomposition of spodumene by calcium chloride. Izv.vys.ucheb.zav.; khim.i khim. tekhn. 4 no.6:1011-1015 '61. (MIRA 15:3)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova, kafedra tekhnologii redkikh i rasseyannykh elementov.  
(Spodumene) (Calcium chloride)

PLYUSHCHEV, V.Ye.; SHAKINO, I.V.; SHKLOVER, L.P.

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonsova, kafedra tekhnologii redkikh i rasseyannykh elementov.  
(Spodumene) (Lithium chloride) (Calcium carbonate)

STEPIN, B.D.; PLYUSHCHEV, V.Ye.

Properties of rubidium chlorochromate and coprecipitation  
of potassium with it. Zhur.neorg.khim. 7 no.2:394-400 F '62.  
(MIRA 15:3)

(Rubidium compounds)

S/078/62/007/007/008/013  
B117/B101

AUTHCRS: Samuseva, R. G., Yegorova, R. S., Flyushchev, V. Ye.

TITLE: Study of the ternary system of sodium bromide - cesium bromide - water

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 7, 1962, 1666-1669

TEXT: The solubility isotherms of the system NaBr - CsBr - H<sub>2</sub>O at 25 and 50°C, and the solubility polytherm of the system CsBr - H<sub>2</sub>O at 0 - 80°C were studied. The first mentioned were shown to have three branches corresponding to the crystallization respectively of CsBr, NaBr·3CsBr, of NaBr·2H<sub>2</sub>O (at 25°C), and of NaBr (at 50°C). At 120°C, the binary salt

NaBr·3CsBr splits into its components; this was identified by the powder method and confirmed by comparing the interplanar distances calculated from the data for NaBr and CsBr. There are 3 figures and 3 tables.

Card 1/2

Study of the ternary system...

S/070/62/007/007/008/013  
B117/B101

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

SUBMITTED: April 4, 1961

Card 2/2

PLYUSHCHEV, V.Ye.; SAVEL'YEVA, M.V.; SHAKHNO, I.V.

Cesium propionate, butyrate, and isovaleriate. Zhur.neorg. Khim.  
7 no.9:2078-2081 S '62. (MIRA '69)  
(Cesium salts) (Acids, Organic)

PLYUSHCHEV, V.Ye.; GRIZIK, A.A.

One metastable modification of  $\text{Li}_2\text{ZrO}_3$  and  $\text{Li}_2\text{HfO}_3$ . Zhur.neorg.-  
khim. 7 no.9:2086-2094 S '62. (MIRA 15:9)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni  
Lomonosova.  
(Lithium zirconate) (Lithium hafnate)

PIAVUSHCHEV, V.Ye.

Interaction of minerals containing rare alkali elements with  
salts and oxides in the processes of sintering and fusion.

Part 6: Interaction between spodumene and sodium sulfate.  
Izv.vys.ucheb.zav.;khim.i khim.tekhn. 4 no.3 463-470 '61.

(NIIRA 14:10)

I. Voskovskiy institut tonkoy khiricheskoy tekhnologii imeni  
Lavrentova, kafedra khimii i tekhnologii redkih i rasseyannnykh  
elementov.

(Spodumene)

(Sodium sulfate)

STEPIN, B.D.; PLYUSHCHEV, V.Ye.

Spectrophotometric study of reactions of rubidium and potassium chlorides with iodine bromide in solution. Zhur.neorg.khim. 6 no.9:2187-2196 S '61. (MIRA 14:9)  
(Rubidium chloride) (Potassium chloride) (Iodine bromide)

PLYUSHCHEV, Ye.V.; NEKHOROSHEV, G.V.

History of the formation of structures in the Tarbagatai  
Range. Trudy VSEGEI 74-3-20 '62. (MIRA 15:9)  
(Tarbagatai Range--Geology, Structural)

PLYUSHCHEV, Ye.V.

Potassium metasomatism in quartz diorites of the Tarbagatai Range.  
Zap. Vses. min. ob-na 89 no.3:353-359 '60. (MIRA 13:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut  
(VSEGEI), Leningrad.  
(Tarbagatai Range--Diorite) (Metasomatism)

L 7085-66 DWT(1) SDF(8)

Acc 100 400097111

Abdrakhmanov, A. B. (Academician); Ivudayev, N. Z.; Smirnov, Ye. N.; Plyushchev,  
Yu. I.; Pavlovskiy, A. I.; Chernyshev, V. K.; Feoktistova, Ye. A.; Zharinov, Ye. I.;  
Zysin, Yu. A.

44,55

44,55

44,55  
ORG: none

TITLE: Production of very high magnetic fields by explosives

SOURCE: AN SSSR. Doklady, v. 165, no. 1, 1965, 65-68

TOPIC TAGS: pulsed magnetic field, flux compression, high field pulse, implosive  
flux compression, explosive flux compression, betatron particle acceleration, high  
density plasma, plasma accelerator/ MK 1, MK 2

ABSTRACT: Experiments with the MK-1 and MK-2 explosion devices for the production of  
very high magnetic field pulses are described. The MK-1 device, which is based on the  
implosion of an axial flux within a metal shell, essentially resembles the arrangement  
described by Fowler and others (J. Appl. Phys. 31, 1965, 588). The MK-2, which works  
on the principle of the expulsion of the field from the solenoid and the subsequent  
compression of the field by the walls of the coaxial liner, is described here for the  
first time. Field intensities of  $1 \times 10^6$  oe were obtained in experiments with an MK-1  
using aluminum liners about 100 mm in diameter. In a subsequent experiment with a  
stainless steel liner with a copper plated inner surface, a field intensity of

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UDC: 538.4

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L 7085-66

ACC NR: AP5027837

$25 \times 10^6$  oe was achieved by imploding the liner to a 4-mm diameter. A field intensity of  $5 \times 10^6$  oe in a volume of  $100 \text{ cm}^3$  was produced by a copper liner 300 mm in diameter, using the MK-2 as the source of the initial field. The MK-2 has a central conductive cylinder enclosed in a coaxial helical solenoid. On one end of the solenoid is a solid cup. A hole in the bottom of the cup holds the end of the central cylinder (see Fig. 1). The central cylinder is filled with an explosive which is ignited from the

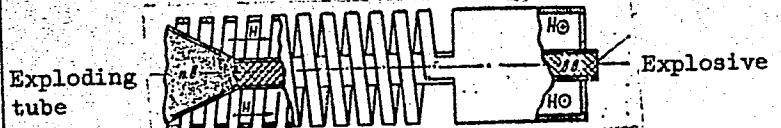


Fig. 1. The MK-2 device

end opposite that holding the cup. The solenoid cylinder system forms the circuit through which a battery of capacitances is discharged. At the peak value of the discharge current, the expanding conical flare of the cylinder created by the propagating explosion touches the end of the solenoid. The explosion's further development is equivalent to moving a cone into the solenoid and shorting its turns until the cone reaches the cup. At this moment a coaxial is formed whose length and inductance grow smaller as the detonation propagates further along the cylinder. The process is accompanied by a corresponding increase in current and field intensity resulting from compression of the flux. Currents of  $5 \times 10^7$  amp (occasionally up to  $1 \times 10^8$  amp) at an inductance value of  $0.01 \mu\text{H}$  were obtained, and field intensities of 1 to

Card 2/3

L 7085-66

ACC NR: AP5027837

$1.5 \times 10^6$  oe were recorded within a volume of several liters. An energy of 1 to  $2 \times 10^7$  J was stored in the field, which amounts to about 10 to 20% of the energy released during the propagation of the explosion within the length of the cup. A receiver of electromagnetic energy was connected to the MK-2 directly or via a transformer, depending on whether the receiver was of low or high inductance. About 50% of the explosive energy was transferred to the receiver by the latter method, which also permits a spatial separation of the sender and makes possible multi-stage arrangements. In the first stage, the initial field is created by a permanent magnet. The second and the subsequent stages amplify the field received from the preceding stage. Energy transfer was also accomplished by breaking the current-carrying circuit by means of an additional explosive charge and using the breaking surge for the transfer. More than 50% of MK-2 output was transferred by this method. A special MK device has been created for iron-free air core betatrons as described by Pavlovskiy and others (DAN, 160, no. 1, 1965, 68), and experiments have been carried out with electrodynamic accelerators of the coaxial type. Orig. art. has: 3 figures. [FP]

SUB CODE: EM, NP/ SUBM DATE: 23Aug65/ ORIG REF: 002/ OTH REF: 001/ ATD PRESS:  
4143

nw

Card 3/3

LAR'KOV, A.; PLYUSHCHEVA, A.; CHIRKOV, D., khudozhnik (poselok Mstera);  
BESHENTSEVA, I., khudozhnik (poselok Mstera); RABOTNOVA, I.,  
kand.iskusstvovedeniya (g. Ivanovo)

Toward survey exhibitions. Prom.koop. 13 no.3:28-29 Mr '59.  
(MIRA 12:4)

1. Predsedatel' pravleniya Ural'skoy kamnereznoy arteli, Ordinsky rayon, Permskoy oblasti (for Lar'kov).
2. Starshiy inzhener-tehnolog Nauchno-issledovatel'skogo instituta khudozhestvennoy promyshlennosti Rospromsoveta, g. Yeletsk, Lipetskoy oblasti (for Plyushcheva).
3. Zamestitel' predsedatelya pravleniya arteli "Pobeda," g. Kirov (for Krupinin).

(Art industries--Exhibitions)

PLYUSHCHINA, L.N.

Application of an alternating-current arc in quantitative spectrum analysis of cast iron. Zav.lab. 24 no.4:459 '58. (MIRA 11:4)  
(Electric arc) (Cast iron--Analysis)  
(Spectrum analysis)

PLYUSHCHEVA, Y.M.; ALIYEV, M.G.

New materials for the petroleum industry. Azerb. neft. khoz. 36  
no. 4:39-41 Ap '57. .... (MLRA 10:6)  
(Building materials)  
(Petroleum industry equipment and supplies)

AUTHOR:

Plyushcheva, L.N.

32-24-4-33/67

TITLE:

The Quantitative Spectral Analysis of Cast Iron With the Application of an Alternating Current Electric Arc  
(Kolichestvennyy spektral'nyy analiz chugunov s primeneniyem dugi peremennogo toka)

PERIODICAL:

Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 4, pp. 459-459 (USSR)

ABSTRACT:

A new method using a generator with an alternating current electric arc PS-39 was developed. Analysis is carried out on the spectrograph ISP-22 with a three-lens condenser system. Individual dimensions are mentioned. A copper electrode is used, and analysis is carried out by the method of three standard samples. A table shows the pair of elements selected. The calibration diagrams are made according to standard samples which had been prepared at the plant and were analyzed in four different laboratories. In the course of three months parallel spectral and chemical analyses were carried out, the results of which showed satisfactory agreement. In the case of a content of more than 0.5% nickel in the cast iron the absolute error amounted to

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The Quantitative Spectral Analysis of Cast Iron  
With the Application of an Alternating Current  
Electric Arc

32-24-4-33/67

0.2 - 0.3%, which is not permitted, so that these concentrations were determined by the chemical method. The laboratory has been employing the method of determination described since 1954 for the analysis of low-alloyed steels. There is 1 table.

1. Cast iron--Spectrographic analysis
2. Cast iron--Chemical analysis

Card 2/2

SERGEYEVA, V.F.; PLYUSCHEVA, S.V.

Effect of some solvents on the absorption spectra of bivalent copper. Zhur.neorg.khim. 7 no.10:2357-2360 O '62. (MIRA 15:10)

1. Kazakhskiy gosudarstvennyy universitet imeni S.M.Kirova.  
(Copper--Spectra) (Solvents)

PLYUSHCHEVA, V.I.

Integral representation of continuous Hermitian indefinite  
nuclei. Dokl.AN SSSR 145 no.3:534-537 J1 '62. (MIRA 15:7)

1. Institut matematiki AN USSR. Predstavлено akademikom N.N.  
Bogolyubovym.  
(Forms (Mathematics)) (Operator, Hermitian)

PLYUSHCHEVA, V.I. (Kiyev)

Integral representation of Hermitian indefinite matrices with  $\lambda$   
negative squares. Ukr.mat.zhur. 14 no.1:30-39 '62. (MIRA 15:3)  
(Matrices) (Integral equations)

16,4500

39575  
S/020/62/145/003/005/013  
B172/B112

AUTHOR: Plyushcheva, V. I.

PERIODICAL: Izdatelstvo Akademii Nauk SSSR. Doklady, v. 145, no. 5, 1962, 934-937

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 5, 1962, 934-937

TEXT: A continuous Hermite kernel  $K(x,y)$ ;  $x,y \in (a,b)$ ;  $-\infty < a, b < +\infty$  is called Hermite-indefinite with  $\omega$  negative squares if (1) for any  $x_1, \dots, x_n \in (a,b)$  the form

$$\sum_1^n K(x_j, x_k) \xi_k \bar{\xi}_j$$

has not more than  $\omega$  negative squares and (2) at least one of these forms has exactly  $\omega$  negative squares. The result obtained by M. G. Kreyn for the integral representation of a Hermite-indefinite function (similar to Bochner's theorem) is generalized for Hermite-indefinite kernels  $K$  which can be expanded in eigenfunctions of a differential operator

Card 1/2

KOMISSAROVA, L.N., kand.khim.nauk, red.; PLYUSHCHEVA, V.Ye., kand.khim.  
nauk, red.; L'VOVA, N.M., red.; SHEMANINA, V.N., red.; SMIRNOVA,  
N.I., tekhn.red.

[Rare earth metals; a collection of articles. Translations.]  
Redkozemel'nye metally; sbornik statei. [Perevody.] Moskva,  
Izd-vo inostr.lit-ry, 1957. 419 p. (Redkie metally 57 La  
(138,9) - 71 Lu (175,0)) (MIRA 11:1)  
(Rare earth metals)

KOMAROV, V.S.; POVOROZNYUK, L.I.; PLYUSHCHEVSKIY, N.I.; ZONOV, Yu.O.

Effect of acid treatment on the structure of clay minerals. Dokl.  
AN BSSR 9 no.7:450-453 J1 '65. (MIRA 18:9)

1. Institut obshchey i neorganicheskoy khimii AN Belorusskoy SSR.

S/250/62/006/005/006/007  
1001/1002

AUTHORS: Levina, S. A., Yermolenko, N. F. and Plyushchhevskiy, N. I.

TITLE: Investigation of mechanical strength and of adsorption activity in granulated native zeolites of different brands

PERIODICAL: Akademiya nauk Belaruskay SSR. Doklady, v. 6, no. 5, 1962, 311-312

TEXT: Granulated zeolites were heated to 350°C for 6 hrs and tested for crushing. Their sorptive activity was determined afterwards by adsorption of methyl alcohol and water vapors in vacuo by means of a quartz spring balance. There is no direct connection between the increase of binding material in the granulated samples and their strength. The strength may increase very slightly but the activity drops down considerably. Preliminary wetting for 6 hrs provides granules comparable in strength with granules of Linde firm. The activity losses are about 2%. Wetting for 24 hrs increases the strength of the granules, but losses of activity reach 8%. Additional wetting increases neither strength nor activity. Addition of organic or inorganic material did not show any positive results. There are 2 figures.

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ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN BSSR (Institute of General and Inorganic Chemistry, AS BSSR)

SUBMITTED: December 28, 1961

Card 1/1

S/250/62/006/008/002/002  
I042/I242

AUTHORS: Levina, S. A., Plyushchhevskiy, N. I., and Ermolenko, N. F.

TITLE: Electron microscopic investigation of the crystallization process of Type 4A zeolite

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 6, no. 8, 1962, 500-502

TEXT: An aluminosilicate gel was prepared by mixing solutions of sodium aluminate and silicate; it was aged for one hour at room temperature, then heated at 95-100°C for three hours to attain complete crystallization. The resulting crystalline powder was found by X-ray diffraction to be identical with industrial Type 4A zeolite. Electron microphotographs were taken of seven samples collected at various stages of the process. The original jelly-like mass acquired a reticular structure after 10 min and a well-formed net pattern after one hour at room temperature. Distinct solid crystals appeared after subsequent heating for one hour and 35 min. There is one figure.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN BSSR (Institute of General and Inorganic Chemistry, AS BSSR)

SUBMITTED: March 22, 1962

Card 1/1

PLYUSHCHOV, N.G., inzh.

Pipeline joints which are easy to disconnect. Gor. zhur no.4:71 Ap '63.  
(MIRA 16:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut gidrodobychi uglya,  
Lugansk.

(Pipe joints)

GOL'DIN, N.A., kand.tekhn.nauk; PLYUSHCHOV, N.G., inzh.

Remote control in mines of the Lugansk Economic Region. Ugol'  
35 no.1:11-16 Ja '60. (MIRA 13:5)

1. Luganskiy sovnarkhoz (for Gol'din). 2. Trest Luganskugleavto-  
matika (for Plyushchov).  
(Remote control)  
(Lugansk Province--Coal mines and mining)

NOVIKOVA, Ye.I.; PLYUSHCHIKOV, V.I.; TANANOVICH, N.I.

Reaction of antioxidants with the hydrogen peroxide of  $\alpha$ -pinene.  
Dokl.AN BSSR 4 no.12:51/-77 D 160. (KHA 17:2)

1. Institut obshchey i neorganicheskoy khimii AN BSSR. Predstavleno  
akademikom AN BSSR N.F. Terenlenko.  
(Pinene) (Antioxidants)

LEVINA, S.A.; YERMOLENKO, N.F.; PLYUSHCHEVSKIY, N.I.

Study of the mechanical strength and adsorption activity  
of granulated zeolites of various brands produced in the  
U.S.S.R. Dokl. AN BSSR 6 no.5:311-312 My '62. (MIRA 15:6)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.  
(Zeolites)

TSYVINA, B.S.; OGAREVA, M.B.; Prinimala uchastiye: PLYUSHCHEKOVA, S.I.

Colorimetric determination of beryllium by the reaction with  
aluminon in niobium-based alloys. Zav.lab. 28 no.8:917-919  
'62. (MIRA 15:11)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut  
redkometallicheskoy promyshlennosti.  
(Beryllium--Analysis) (Aluminon) (Niobium-beryllium alloys)